2020/21/1   Nr: 1

Neptun: U1URTV

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,80	17,1	19,0	12	21	-
Brownish yellow sandy gravel	11,90	18,3	20,2	27	32	-
Grey, hard clay	10,30	20,7	22,0	-	-	86

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,25 mBf
Floor height:	3,25 m
Design water level:	95,45 mBf
Construction water level:	92,80 mBf

Project tasks:

    Cross-section (M=1:100)
    GEO limit state
    Anchor design (free length, grouted length, stability, bearing capacity)
    Overall stability
    Soil resistance for embedding depth
    Hydraulic soil failure
    Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Nr: 2

Neptun: CVUGDJ

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,75	17,0	18,7	13	16	-
Brownish yellow sandy gravel	10,85	17,8	20,5	25	27	-
Grey, hard clay	12,40	20,9	21,6	-	-	86

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,35 mBf
Floor height:	3,20 m
Design water level:	95,85 mBf
Construction water level:	93,95 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 3

Neptun: M90QDZ

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,80	16,9	18,0	11	21	-
Brownish yellow sandy gravel	9,60	18,1	19,8	25	27	-
Grey, hard clay	12,60	21,0	21,9	-	-	147

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,45 mBf
Floor height:	2,70 m
Design water level:	96,85 mBf
Construction water level:	92,25 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 4

Neptun: B7QKGB

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,20	17,0	18,0	12	15	-
Brownish yellow sandy gravel	8,95	17,9	19,9	28	28	-
Grey, hard clay	14,85	21,1	21,5	-	-	100

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,45 mBf
Floor height:	3,20 m
Design water level:	96,90 mBf
Construction water level:	93,65 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 5

Neptun: LDG7CH

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,50	17,3	18,6	11	20	-
Brownish yellow sandy gravel	9,05	18,4	19,9	26	29	-
Grey, hard clay	13,45	21,1	21,5	-	-	146

Heights, levels:

         Ground level: 100,00 mBf
         Top of ground floor slab: 100,00 mBf
         Floor height: 3,00 m
         Design water level: 95,25 mBf
         Construction water level: 92,35 mBf

Project tasks:

         Cross-section (M=1:100)
         GEO limit state
         Anchor design (free length, grouted length, stability, bearing capacity)
         Overall stability
         Soil resistance for embedding depth
         Hydraulic soil failure
         Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 6

Neptun: G8QOM6

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,95	17,0	18,5	14	19	-
Brownish yellow sandy gravel	12,00	18,1	20,4	26	32	-
Grey, hard clay	11,05	21,1	21,5	-	-	125

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,10 mBf
Floor height:	2,85 m
Design water level:	95,25 mBf
Construction water level:	93,25 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 7

Neptun: ZOYAU2

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,20	16,9	18,3	10	20	-
Brownish yellow sandy gravel	9,25	17,9	19,9	29	25	-
Grey, hard clay	14,55	20,6	22,2	-	-	112

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,25 mBf
Floor height:	3,00 m
Design water level:	96,30 mBf
Construction water level:	93,35 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 8

Neptun: FLIGV9

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,95	16,8	18,1	15	22	-
Brownish yellow sandy gravel	11,60	18,1	20,0	29	27	-
Grey, hard clay	11,45	20,6	21,8	-	-	102

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,15 mBf
        Floor height: 2,80 m
        Design water level: 96,65 mBf
        Construction water level: 92,35 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 9

Neptun: M7HZXP

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,40	17,3	18,3	14	19	-
Brownish yellow sandy gravel	5,90	17,8	20,2	28	30	-
Grey, hard clay	15,70	21,1	21,8	-	-	87

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,10 mBf
Floor height:	2,70 m
Design water level:	95,65 mBf
Construction water level:	93,45 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 10

Neptun: JCBAHR

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,20	17,2	18,4	14	16	-
Brownish yellow sandy gravel	10,30	18,1	19,5	25	28	-
Grey, hard clay	11,50	20,6	21,6	-	-	144

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,20 mBf
Floor height:	2,75 m
Design water level:	96,00 mBf
Construction water level:	93,55 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 11

Neptun: WXGK2I

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,65	17,3	18,7	11	18	-
Brownish yellow sandy gravel	9,75	18,1	20,3	30	27	-
Grey, hard clay	12,60	20,6	21,7	-	-	141

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,40 mBf
Floor height:	3,25 m
Design water level:	95,95 mBf
Construction water level:	93,95 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 12

Neptun: D5LF6Q

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,80	17,2	18,3	13	19	-
Brownish yellow sandy gravel	7,00	18,0	20,4	31	25	-
Grey, hard clay	15,20	20,7	21,9	-	-	128

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,35 mBf
Floor height:	2,70 m
Design water level:	96,90 mBf
Construction water level:	92,40 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 13

Neptun: IJMYG5

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $[kN/m^3]$	γ_{sat} $[kN/m^3]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,30	17,0	18,6	14	18	-
Brownish yellow sandy gravel	7,20	18,1	19,7	25	32	-
Grey, hard clay	15,50	20,9	22,0	-	-	106

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,35 mBf
Floor height:	2,85 m
Design water level:	97,00 mBf
Construction water level:	92,65 mBf

Project tasks:

    Cross-section (M=1:100)
    GEO limit state
    Anchor design (free length, grouted length, stability, bearing capacity)
    Overall stability
    Soil resistance for embedding depth
    Hydraulic soil failure
    Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 14

Neptun: DM90TW

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,10	17,6	18,1	12	20	-
Brownish yellow sandy gravel	9,55	18,3	19,4	32	28	-
Grey, hard clay	12,35	20,8	22,2	-	-	137

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,25 mBf
Floor height:	3,05 m
Design water level:	96,45 mBf
Construction water level:	92,55 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 15

Neptun: ENW9GY

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,50	17,0	18,8	13	18	-
Brownish yellow sandy gravel	9,30	18,1	19,7	27	30	-
Grey, hard clay	12,20	20,9	22,2	-	-	103

Heights, levels:

        Ground level: 100,00 mBf

        Top of ground floor slab: 100,00 mBf

        Floor height: 3,10 m

        Design water level: 96,85 mBf

        Construction water level: 92,65 mBf

Project tasks:

        Cross-section (M=1:100)

        GEO limit state

        Anchor design (free length, grouted length, stability, bearing capacity)

        Overall stability

        Soil resistance for embedding depth

        Hydraulic soil failure

        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 16

Neptun: FJFQG9

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,75	17,6	18,5	13	19	-
Brownish yellow sandy gravel	8,15	18,0	19,8	29	27	-
Grey, hard clay	14,10	20,6	21,8	-	-	148

Heights, levels:

         Ground level: 100,00 mBf
         Top of ground floor slab: 100,25 mBf
         Floor height: 3,15 m
         Design water level: 95,55 mBf
         Construction water level: 92,45 mBf

Project tasks:

         Cross-section (M=1:100)
         GEO limit state
         Anchor design (free length, grouted length, stability, bearing capacity)
         Overall stability
         Soil resistance for embedding depth
         Hydraulic soil failure
         Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 17

Neptun: LIPXXS

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,35	17,6	18,4	13	17	-
Brownish yellow sandy gravel	10,70	17,8	19,4	32	26	-
Grey, hard clay	11,95	20,8	22,1	-	-	125

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,45 mBf
Floor height:	3,25 m
Design water level:	96,55 mBf
Construction water level:	93,30 mBf

Project tasks:

    Cross-section (M=1:100)
    GEO limit state
    Anchor design (free length, grouted length, stability, bearing capacity)
    Overall stability
    Soil resistance for embedding depth
    Hydraulic soil failure
    Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 18

Neptun: WU9IFB

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,10	17,5	18,1	14	15	-
Brownish yellow sandy gravel	8,80	18,0	20,5	32	31	-
Grey, hard clay	13,10	20,6	21,5	-	-	113

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,00 mBf
Floor height:	3,05 m
Design water level:	95,60 mBf
Construction water level:	92,80 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 19

Neptun: TWQUXN

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,35	16,8	18,0	12	19	-
Brownish yellow sandy gravel	7,85	18,1	20,1	29	28	-
Grey, hard clay	15,80	20,6	21,8	-	-	130

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,50 mBf
Floor height:	3,10 m
Design water level:	96,25 mBf
Construction water level:	92,20 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 20

Neptun: R59OSK

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,25	16,8	18,8	13	16	-
Brownish yellow sandy gravel	9,60	18,2	19,4	26	28	-
Grey, hard clay	13,15	21,0	21,5	-	-	139

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,15 mBf
Floor height:	2,75 m
Design water level:	96,55 mBf
Construction water level:	92,10 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 21

Neptun: ROOKOV

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,45	17,3	18,0	12	21	-
Brownish yellow sandy gravel	9,40	18,0	20,0	28	32	-
Grey, hard clay	13,15	21,2	22,0	-	-	119

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,30 mBf
Floor height:	2,85 m
Design water level:	96,10 mBf
Construction water level:	92,85 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 22

Neptun: HTPAMW

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,60	17,0	18,0	15	17	-
Brownish yellow sandy gravel	10,95	18,1	20,2	30	27	-
Grey, hard clay	12,45	20,7	21,9	-	-	117

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,10 mBf
Floor height:	2,90 m
Design water level:	95,00 mBf
Construction water level:	93,50 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 23

Neptun: I2UK5W

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,15	17,3	19,0	15	22	-
Brownish yellow sandy gravel	10,20	18,4	19,9	29	30	-
Grey, hard clay	12,65	20,9	22,0	-	-	127

Heights, levels:

        Ground level: 100,00 mBf

        Top of ground floor slab: 100,25 mBf

        Floor height: 2,90 m

        Design water level: 96,65 mBf

        Construction water level: 92,45 mBf

Project tasks:

        Cross-section (M=1:100)

        GEO limit state

        Anchor design (free length, grouted length, stability, bearing capacity)

        Overall stability

        Soil resistance for embedding depth

        Hydraulic soil failure

        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 24

Neptun: V89D7Y

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,45	16,8	18,1	13	21	-
Brownish yellow sandy gravel	7,20	17,8	20,4	29	27	-
Grey, hard clay	14,35	20,9	21,7	-	-	131

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,30 mBf
Floor height:	3,25 m
Design water level:	96,10 mBf
Construction water level:	92,95 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 25

Neptun: B98FSI

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,60	16,9	18,7	11	22	-
Brownish yellow sandy gravel	7,00	18,0	19,5	27	30	-
Grey, hard clay	15,40	20,9	21,8	-	-	124

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,35 mBf
Floor height:	3,30 m
Design water level:	96,70 mBf
Construction water level:	93,05 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 26

Neptun: CPLNW9

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,20	17,3	18,3	13	18	-
Brownish yellow sandy gravel	9,05	18,2	20,5	27	25	-
Grey, hard clay	13,75	20,8	21,8	-	-	148

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,40 mBf
Floor height:	2,80 m
Design water level:	95,15 mBf
Construction water level:	92,70 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 27

Neptun: AJD6AW

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,05	17,6	18,8	12	16	-
Brownish yellow sandy gravel	6,05	18,3	20,4	27	32	-
Grey, hard clay	15,90	20,8	21,6	-	-	86

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,50 mBf
        Floor height: 3,10 m
        Design water level: 95,60 mBf
        Construction water level: 92,85 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1 Nr: 28

Neptun: MCBZI3

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,95	17,3	18,6	12	19	-
Brownish yellow sandy gravel	8,55	18,4	20,0	26	32	-
Grey, hard clay	13,50	21,0	22,1	-	-	96

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,05 mBf
        Floor height: 2,95 m
        Design water level: 96,45 mBf
        Construction water level: 92,30 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1 Nr: 29

Neptun: WPPJER

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,85	16,9	18,3	11	21	-
Brownish yellow sandy gravel	8,85	18,1	19,7	30	26	-
Grey, hard clay	13,30	20,6	21,7	-	-	131

Heights, levels:

 Ground level: 100,00 mBf
 Top of ground floor slab: 100,35 mBf
 Floor height: 3,10 m
 Design water level: 96,70 mBf
 Construction water level: 93,45 mBf

Project tasks:

 Cross-section (M=1:100)
 GEO limit state
 Anchor design (free length, grouted length, stability, bearing capacity)
 Overall stability
 Soil resistance for embedding depth
 Hydraulic soil failure
 Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 30

Neptun: RDCD27

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,95	17,2	18,2	13	21	-
Brownish yellow sandy gravel	11,65	18,5	19,8	27	29	-
Grey, hard clay	10,40	21,0	22,0	-	-	124

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,25 mBf
Floor height:	3,00 m
Design water level:	95,15 mBf
Construction water level:	93,70 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 31

Neptun: L6MU2I

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,95	17,2	18,8	14	16	-
Brownish yellow sandy gravel	8,90	18,1	19,6	30	27	-
Grey, hard clay	14,15	20,7	21,9	-	-	88

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,45 mBf
        Floor height: 3,05 m
        Design water level: 96,30 mBf
        Construction water level: 93,70 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 32

Neptun: VLJH4C

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $[kN/m^3]$	γ_{sat} $[kN/m^3]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,20	17,1	18,3	11	19	-
Brownish yellow sandy gravel	8,40	18,5	19,4	31	29	-
Grey, hard clay	15,40	20,6	22,2	-	-	102

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,05 mBf
Floor height:	2,80 m
Design water level:	96,10 mBf
Construction water level:	93,40 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1　　　　　　　　　　　　　　　　　　　　　　　Nr: 33

Neptun: DQ0K2B

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,85	17,0	18,2	15	15	-
Brownish yellow sandy gravel	8,20	18,1	20,4	25	28	-
Grey, hard clay	13,95	20,7	21,5	-	-	148

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,00 mBf
Floor height:	3,10 m
Design water level:	96,75 mBf
Construction water level:	92,65 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 34

Neptun: OGJAWI

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $[kN/m^3]$	γ_{sat} $[kN/m^3]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,85	17,5	18,0	15	18	-
Brownish yellow sandy gravel	7,20	17,9	20,5	31	28	-
Grey, hard clay	14,95	20,8	21,7	-	-	126

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,40 mBf
Floor height:	2,75 m
Design water level:	95,35 mBf
Construction water level:	92,10 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 35

Neptun: BYSMZ1

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,65	17,1	18,9	10	15	-
Brownish yellow sandy gravel	6,65	18,0	20,2	31	28	-
Grey, hard clay	15,70	21,2	22,1	-	-	97

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,15 mBf
Floor height:	3,30 m
Design water level:	96,30 mBf
Construction water level:	92,90 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1　　　　　　　　　　　　　　　　　　　　　　　　　　Nr: 36

Neptun: BLAART

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,60	17,3	18,5	12	22	-
Brownish yellow sandy gravel	13,05	17,9	20,4	30	25	-
Grey, hard clay	10,35	20,9	22,0	-	-	125

Heights, levels:

　　　　　Ground level:　　　　　　　　　100,00 mBf
　　　　　Top of ground floor slab:　　　100,05 mBf
　　　　　Floor height:　　　　　　　　　　3,15 m
　　　　　Design water level:　　　　　　95,10 mBf
　　　　　Construction water level:　　　92,20 mBf

Project tasks:

　　　　　Cross-section (M=1:100)
　　　　　GEO limit state
　　　　　Anchor design (free length, grouted length, stability, bearing capacity)
　　　　　Overall stability
　　　　　Soil resistance for embedding depth
　　　　　Hydraulic soil failure
　　　　　Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 37

Neptun: JG3A01

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,05	17,5	18,1	10	16	-
Brownish yellow sandy gravel	7,40	17,8	19,9	27	32	-
Grey, hard clay	14,55	21,0	22,1	-	-	146

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,30 mBf
        Floor height: 2,80 m
        Design water level: 96,00 mBf
        Construction water level: 93,80 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 38

Neptun: TLLAQK

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,30	17,2	18,8	15	17	-
Brownish yellow sandy gravel	5,75	18,5	19,8	29	31	-
Grey, hard clay	15,95	21,2	21,6	-	-	109

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,10 mBf
        Floor height: 3,15 m
        Design water level: 95,50 mBf
        Construction water level: 93,85 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1 Nr: 39

Neptun: EVUX9U

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,20	17,5	18,9	11	15	-
Brownish yellow sandy gravel	9,35	17,8	19,5	28	32	-
Grey, hard clay	13,45	21,0	21,6	-	-	146

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,40 mBf
Floor height:	3,25 m
Design water level:	96,25 mBf
Construction water level:	93,10 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 40

Neptun: HF01GQ

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,00	17,2	18,3	15	20	-
Brownish yellow sandy gravel	12,95	17,9	20,0	25	27	-
Grey, hard clay	10,05	21,1	21,5	-	-	104

Heights, levels:

        Ground level: 100,00 mBf
        Top of ground floor slab: 100,20 mBf
        Floor height: 3,25 m
        Design water level: 95,40 mBf
        Construction water level: 92,20 mBf

Project tasks:

        Cross-section (M=1:100)
        GEO limit state
        Anchor design (free length, grouted length, stability, bearing capacity)
        Overall stability
        Soil resistance for embedding depth
        Hydraulic soil failure
        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 41

Neptun: H999I3

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,00	17,2	18,0	12	17	-
Brownish yellow sandy gravel	11,45	18,2	20,3	25	26	-
Grey, hard clay	11,55	21,0	21,5	-	-	100

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,30 mBf
Floor height:	2,85 m
Design water level:	96,55 mBf
Construction water level:	93,50 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 42

Neptun: UN28FO

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,70	17,2	18,4	13	20	-
Brownish yellow sandy gravel	7,35	18,1	20,0	31	25	-
Grey, hard clay	14,95	20,9	22,1	-	-	129

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,30 mBf
Floor height:	2,90 m
Design water level:	96,05 mBf
Construction water level:	93,35 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 43

Neptun: HI0R6A

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,35	17,0	18,0	13	16	-
Brownish yellow sandy gravel	7,40	18,0	19,4	32	32	-
Grey, hard clay	14,25	20,8	21,9	-	-	83

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,15 mBf
Floor height:	3,00 m
Design water level:	95,85 mBf
Construction water level:	93,55 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 44

Neptun: E7IR0N

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,40	17,0	18,8	14	16	-
Brownish yellow sandy gravel	12,55	17,8	20,4	25	29	-
Grey, hard clay	10,05	21,1	21,5	-	-	110

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,40 mBf
Floor height:	2,85 m
Design water level:	95,15 mBf
Construction water level:	93,95 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 45

Neptun: TNZVRP

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,50	17,1	18,9	10	17	-
Brownish yellow sandy gravel	9,35	18,4	20,4	28	29	-
Grey, hard clay	12,15	21,1	21,7	-	-	139

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,20 mBf
Floor height:	2,95 m
Design water level:	97,00 mBf
Construction water level:	92,10 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 46

Neptun: U667MC

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,75	17,6	18,2	14	17	-
Brownish yellow sandy gravel	9,45	17,8	20,4	31	25	-
Grey, hard clay	12,80	20,8	21,8	-	-	98

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,20 mBf
Floor height:	2,90 m
Design water level:	96,65 mBf
Construction water level:	93,45 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 47

Neptun: Q5NIHX

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,95	17,3	18,9	13	16	-
Brownish yellow sandy gravel	8,40	18,1	20,3	31	31	-
Grey, hard clay	13,65	20,6	21,6	-	-	120

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,50 mBf
Floor height:	3,05 m
Design water level:	96,80 mBf
Construction water level:	92,50 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 48

Neptun: IQ28A9

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,30	17,0	18,0	14	20	-
Brownish yellow sandy gravel	9,75	18,5	20,4	28	29	-
Grey, hard clay	12,95	20,9	21,6	-	-	148

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,40 mBf
Floor height:	3,10 m
Design water level:	95,20 mBf
Construction water level:	93,10 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 49

Neptun: HBSJVJ

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,65	17,0	18,0	15	17	-
Brownish yellow sandy gravel	7,20	18,4	19,5	27	26	-
Grey, hard clay	15,15	20,9	22,2	-	-	84

Heights, levels:

        Ground level: 100,00 mBf

        Top of ground floor slab: 100,45 mBf

        Floor height: 3,15 m

        Design water level: 95,90 mBf

        Construction water level: 92,50 mBf

Project tasks:

        Cross-section (M=1:100)

        GEO limit state

        Anchor design (free length, grouted length, stability, bearing capacity)

        Overall stability

        Soil resistance for embedding depth

        Hydraulic soil failure

        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 50

Neptun: V69XFH

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,10	16,9	18,0	10	17	-
Brownish yellow sandy gravel	7,05	18,3	20,3	32	26	-
Grey, hard clay	15,85	20,8	21,8	-	-	110

Heights, levels:

        Ground level: 100,00 mBf

        Top of ground floor slab: 100,45 mBf

        Floor height: 2,70 m

        Design water level: 96,75 mBf

        Construction water level: 93,20 mBf

Project tasks:

        Cross-section (M=1:100)

        GEO limit state

        Anchor design (free length, grouted length, stability, bearing capacity)

        Overall stability

        Soil resistance for embedding depth

        Hydraulic soil failure

        Retaining wall internal forces, reinforcement design (moment, shear force)

Neptun: K3LMFG

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $[kN/m^3]$	γ_{sat} $[kN/m^3]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,90	17,5	18,6	15	17	-
Brownish yellow sandy gravel	7,70	18,1	20,3	25	28	-
Grey, hard clay	15,40	21,1	21,8	-	-	82

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,50 mBf
Floor height:	2,85 m
Design water level:	95,25 mBf
Construction water level:	92,25 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1　　　　　　　　　　　　　　　　　　　　　　　　Nr: 52

Neptun: BX4W1I

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	3,25	17,4	18,7	11	19	-
Brownish yellow sandy gravel	6,50	18,2	20,5	32	29	-
Grey, hard clay	15,25	20,8	21,9	-	-	88

Heights, levels:

　　　　Ground level:　　　　　　　　　100,00 mBf
　　　　Top of ground floor slab:　　　　100,00 mBf
　　　　Floor height:　　　　　　　　　　3,25 m
　　　　Design water level:　　　　　　　95,55 mBf
　　　　Construction water level:　　　　93,00 mBf

Project tasks:

　　　　Cross-section (M=1:100)
　　　　GEO limit state
　　　　Anchor design (free length, grouted length, stability, bearing capacity)
　　　　Overall stability
　　　　Soil resistance for embedding depth
　　　　Hydraulic soil failure
　　　　Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 53

Neptun: F3UOZ3

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,45	17,5	18,3	15	18	-
Brownish yellow sandy gravel	7,05	18,5	19,5	30	25	-
Grey, hard clay	15,50	20,7	22,0	-	-	138

Heights, levels:

        Ground level: 100,00 mBf

        Top of ground floor slab: 100,50 mBf

        Floor height: 3,10 m

        Design water level: 96,65 mBf

        Construction water level: 93,55 mBf

Project tasks:

        Cross-section (M=1:100)

        GEO limit state

        Anchor design (free length, grouted length, stability, bearing capacity)

        Overall stability

        Soil resistance for embedding depth

        Hydraulic soil failure

        Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1

Nr: 54

Neptun: D4MVYC

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/m^3\right]$	γ_{sat} $\left[kN/m^3\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	1,50	17,1	18,3	12	21	-
Brownish yellow sandy gravel	9,05	18,0	19,6	26	26	-
Grey, hard clay	14,45	20,8	21,5	-	-	131

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,15 mBf
Floor height:	3,20 m
Design water level:	95,20 mBf
Construction water level:	93,90 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)

2020/21/1   Nr: 55

Neptun: GKUPPJ

Deep excavation project assignment

Design a three story deep excavation with one row of temporary ground anchors for an inner city building. One generic cross-section has to be designed using Geo5 software. The retaining wall may be designed using a diaphragm wall or a pile wall. The internal floor slabs are 30 cm thick, while the bottom slab is 50 cm thick.

Borehole data

Layer	Layer thickness [m]	γ $\left[kN/_{m^3}\right]$	γ_{sat} $\left[kN/_{m^3}\right]$	φ [°]	c [kPa]	c_u [kPa]
Fill, construction debris	2,00	16,8	18,8	10	19	-
Brownish yellow sandy gravel	11,65	18,1	19,6	25	25	-
Grey, hard clay	11,35	20,6	21,7	-	-	82

Heights, levels:

Ground level:	100,00 mBf
Top of ground floor slab:	100,00 mBf
Floor height:	2,95 m
Design water level:	96,05 mBf
Construction water level:	92,75 mBf

Project tasks:

Cross-section (M=1:100)
GEO limit state
Anchor design (free length, grouted length, stability, bearing capacity)
Overall stability
Soil resistance for embedding depth
Hydraulic soil failure
Retaining wall internal forces, reinforcement design (moment, shear force)